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REMARKS

The Invention.

The present invention provides a novel endoglucanase nucleic acid sequence, designated *egl8*, and the corresponding EGVIII amino acid sequence. The invention also provides expression vectors and host cells comprising a nucleic acid sequence encoding EGVIII, recombinant EGVIII proteins and methods for producing the same.

Status of the Application.

Claims Claims 1-17, 19-20, 22-24, and 26 are pending in the application. Claims 6, 7 and 26 were amended to correct minor errors in type font. Claims 1, 8, 9, 23 and 26 were amended to clarify what Applicants believe are the metes and bounds of the invention. Support for these amendments may be found throughout the specification as filed. No new matter is introduced by these amendments and their entry is respectfully requested.

Claim Objections.

Claim 2 is objected to as allegedly reciting duplicate limitations. Specifically, the Examiner asserts that part (c) and part (e) are duplicative as are part (d) and part (f). Applicants respectfully disagree.

Parts (c) and (d) refer to Figure 2, while parts (e) and (f) refer to SEQ ID NO:2. Figure 2 depicts the enzyme with its secretion signal while SEQ ID NO:2 recites the mature sequence (without the secretion signal). Thus, two different molecules are being referred to in the different parts. Withdrawal of this objection is respectfully requested.

Various claims were objected to because biological names were not in italics. Applicants have corrected the biological names to be recited in italics rendering this objection moot. Withdrawal of the objection is respectfully requested.

35 U.S.C. §112, first paragraph.

Claims 1-17, 19-20, 22 and 26

Claims 1-17, 19-20, 22 and 26 stand rejected under 35 USC §112, first paragraph as failing to enable any person skilled in the art to which it pertains, or with

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which it is most nearly connected, to make the invention commensurate in scope with these claims. Specifically, the Examiner assert that the claims are so broad as to encompass any polynucleotide from any source encoding an endoglucanase, vectors, host cells, and method or expressing said endoglucanase and a host cell expressing an inactivated endoglucanase. Applicants respectfully traverse.

It is settled law that the Patent Office, in asserting an enabling disclosure is not commensurate in scope with the protection sought, must support such assertions with evidence or reasoning substantiating the doubts so expressed. In re Dinh-Huyen, 181 U.S.P.Q. 46 (CCPA 1974). The Patent Office requirement is further described in In re Bowen, 181 U.S.P.Q. 48 (CCPA 1974):

“As a matter of Patent Office practice, then, a specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented *must* be taken as in compliance with the enabling requirement of the first paragraph of §112, *unless* there is reason to doubt the objective truth of the statements contained therein which must be relied upon for enabling support. . . .

Here, the only reason given appellant why his specification does not enable one skilled in the art to use his invention as broadly as it is claimed is the statement of the board that “polymerizable materials” include “not only . . . all of the very many organic polymers . . . but also inorganic polymers.” But even this statement only identifies a subgenus of “polymerizable materials” without giving a reason for the implication inherent therein that inorganic polymers would not work in appellant’s process. . . .

Accordingly, there appears to be no basis for the non-enablement rejection on the theory that claims read on undisclosed polymers. While the claims literally comprehend numerous polymers in addition to the one specifically described in appellant’s specification, nylon 66, no persuasive reason has been given by the Patent Office why the specification does not realistically enable one skilled in the art to practice the invention as broadly as it is claims.”

The Office Action, as in Bowen, fails to suggest any reasons for the implication therein that the other described polynucleotides in the specification would not work in the claimed invention. Applicants submit that merely objecting that the claims encompass “extremely large number of polynucleotides” is insufficient. The unsupported conjectural statements regarding [whatever the objection is] are similarly

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unsupported and therefore insufficient to support the rejection under 35 U.S.C. §112, first paragraph.

Applicants currently claim a polynucleotide encoding an endoglucanase from a fungal source. Thus, Applicants believe that the Examiner has misread the claimed invention. However, to further clarify the invention, Applicants have amended claim 1 to recite a specific endoglucanase, i.e., EG VIII.

Withdrawal of the rejection is respectfully requested.

Claims 8-9 and 11

Claims 8-9 and 11 stand rejected under 35 USC §112, first paragraph as allegedly containing subject which was not described in the specification in such a way as to convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner asserts that the specification lacks any disclosure of the function of all DNA sequences encompassed by the claims. Applicants respectfully traverse.

The specification, taken as a whole, is directed to polypeptides having endoglucanase activity and polynucleotides encoding them. Thus, a function is attributed to the polynucleotide encoded polypeptides. Applicants have amended claim 8 to recite that the invention is directed to polynucleotides encoding polypeptides having endoglucanase activity.

Withdrawal of the rejection is respectfully requested.

35 U.S.C. §112, second paragraph.

Claims 1, 6 and 7

Claims 1, 6 and 7 stand rejected under 35 USC §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Specifically, the Examiner asserts that the phrase "derived from" is unclear. Applicants respectfully traverse.

Applicants have amended Claims 1 and 6. Claim 7, although it has not been amended, depends from Claim 6 which has been amended.

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The word "derive" means: 1 a : to take, receive, or obtain especially from a specified source b : to obtain (a chemical substance) actually or theoretically from a parent substance. Applicant has not used this word in a fashion that is antithetical to its common meaning. However, to further prosecution, Applicants have amended Claims 1 and 6 to clarify the subject matter which Applicants regard as the invention.

Withdrawal of the rejection is respectfully requested.

Claims 2-10, 12-17 and 22

Claims 2-10, 12-17 and 22 stand rejected under 35 USC §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Specifically, the Examiner asserts that metes and bounds of the term "endoglucanase EG VIII" are not clear. Applicants respectfully traverse.

Applicants are at a loss to understand the objection. The Examiner appears to understand that the endoglucanase EG VIII differs from other known endoglucanases by its amino acid sequence.

It is routine in the art to sequence proteins, run molecular weight gels and otherwise characterize the protein under investigation. Thus, for example, the inventive EG VIII has a predicted molecular weight of 46.9 kDa (see page 24, line 8). The amino acid sequence is given in Figure 2. Thus, one skilled in the art would be able to identify their protein as EG VIII if they were to compare various biochemical results and, in particular, the amino acid sequence.

Withdrawal of the rejection is respectfully requested.

Claims 8-9 and 11

Claims 8-9 and 11 are rejected under 35 USC §112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner asserts that the phrases "including a polynucleotide" and "including the expression construct" are unclear. Applicants have amended the claims to recite "comprising" rendering this rejection moot. Withdrawal of the rejection is respectfully requested.

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Claims 8 and claims 9 and 11 dependent therefrom

Claim 8 and claims 9 and 11 dependent therefrom stand rejected under 35 USC §112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner has kindly pointed out that Applicants were comparing a nucleotide sequence with an amino acid sequence. Applicants have amended Claim 8 to correct this error. Withdrawal of the rejection is respectfully requested.

Claim 23 and claim 24 dependent therefrom

Claim 23 and claim 24 dependent therefrom stand rejected under 35 USC §112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner asserts that the term "decreases" renders the claim indefinite.

Applicants have amended claim 23 rendering this rejection moot. Withdrawal is respectfully requested.

35 U.S.C. §102(b).

Claims 1, 6-7, 19-20, 22 and 26 stand rejected under 35 USC §102(b) as being anticipated by Okada *et al.* (Appl. Environ. Microbiol. (1998) 64(2):555-563). Applicants respectfully traverse.

Applicants have amended Claim 1 to recite an EG VIII endoglucanase. Claim 6 has been amended to depend from claim 1. Claim 7, although it has not been amended, depends from Claim 6 which has been amended. Claim 19-20, 22 and 26 either depend from claim 2 or recite specifically that the endoglucanase is an EG VIII.

Okada *et al.* teaches the characterization of *Trichoderma reesei* EGIII. See abstract and entire reference. EGIII is a low molecular weight endoglucanase of between 25 and 29 kDa. Okada *et al.* fails to teach an EG VIII endoglucanase as provided by the presently claimed invention.

Withdrawal of the rejection is respectfully requested.

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35 U.S.C. §103.

The Examiner has rejected Claim 26 as allegedly obvious over the combination of Okada, *et al.* in view of Ward, *et al.* Applicants respectfully traverse the rejection.

An essential requirement for a *prima facie* case of obviousness is whether a person skilled in the art would be motivated to modify the references to arrive at the claimed invention. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598-99 (Fed. Cir. 1988) and *In re Jones*, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992). In particular,

"the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." *Northern Telecom Inc. v. Datapoint Corp.*, 15 USPQ2d 1321, 1323 (Fed. Cir. 1990)

As noted above, Okada *et al.* fails to teach an EG VIII endoglucanase as provided by the presently claimed invention. There is no suggestion or teaching that it should be combined with Ward *et al.*

The Examiner asserts that "a reasonable expectation of success since Okada *et al.* provide the polynucleotide encoding an endoglucanase and Ward *et al.* provide vector and host cells to express the endoglucanase." See Office Action, page 13. Applicants respectfully disagree. The Examiner's statements are unsupported opinions and are contrary to the teachings of the prior art.

The selection of the combination suggested by the Examiner is not fairly suggested in the prior art. The Examiner impermissibly picks and chooses ingredients without considering the invention as a whole, and looks suspiciously like hindsight reconstruction reached through the teachings of Applicants' disclosure. At best, the analysis is obvious to try.

Withdrawal of the rejection is respectfully requested.

CONCLUSION


In light of the above amendments, as well as the remarks, the Applicants believe the pending claims are in condition for allowance and issuance of a formal Notice of

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Allowance at an early date is respectfully requested. If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (650) 846-7516.

Respectfully submitted,
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